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ABSTRACT

This study investigated the effects of oral communication apprehension and writing communication apprehension on student contact with instructors outside the classroom and the effects of apprehension on academic achievement. Results indicated that apprehension negatively affects both student assistance outside the classroom and academic achievement. The article concludes with practical implications for the classroom teacher concerned with student apprehension problems. (Author)

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COMMUNICATION APPREHENSION, STUDENT ASSISTANCE OUTSIDE THE CLASSROOM, AND ACADEMIC ACHIEVEMENT: SOME PRACTICAL IMPLICATIONS FOR THE CLASSROOM TEACHER*

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COMMUNICATION APPREHENSION, STUDENT ASSISTANCE OUTSIDE THE CLASSROOM, AND ACADEMIC ACHIEVEMENT: SOME PRACTICAL IMPLICATIONS FOR THE CLASSROOM TEACHER

During the past several years, a plethora of research has been conducted about communication apprehension.[1] Communication apprehension (CA), or more specifically oral communication apprehension (OCA), was originally conceptualized as speaker anxiety, but has recently taken on a more pervasive conceptualization which includes the negative effects associated with encoding oral and written messages, as well as in receiving messages.[2]

A substantial number of studies have investigated the relationships among CA, communication behavior, and interpersonal perceptions. These studies have consistently revealed that high OCAs avoid interaction, and if forced to communicate, certain undesirable perceptions are formed of them by other communicators. Studies also reveal that high apprehensives are perceived as less attractive, less credible, less similar, less desirable as opinion leaders, less likely to succeed in school (both academically and socially), and less likely to be successful in their careers.

While the majority of human communication research on CA has used college students as subjects, their use has usually been incidental to the investigations of research questions and hypotheses. Many studies have employed simulated descriptions of high and low CAs; these findings have been based on perceptions rather than on <u>actual</u> behaviors. The purpose of this study was to investigate the effects of OCA and writing communication apprehension (WCA) on the contacts students have with their instructor and their effects on student achievement.

RATIONALE FOR HYPOTHESES

Oral Communication Apprehension (OCA)

The capability of a student to succeed in today's learning environment is partially determined by an ability to effectively communicate.[3] Scott, Yates, and Wheeless[4] have found that the effect of OCA in a modularized, criterion based system of instruction significantly affected the efficiency of the learner. Students with high OCA, when compared to lows, not only were taking tests on course modules more often (repeated testing was permitted) but were also successfully completing fewer of the modules.

Bashore,[5] studying high school seniors, found a slight negative relationship between OCA and intelligence. He failed to find a significant correlation between OCA and grade point average in the same study. McCroskey, Daly, and Sorensen[6] also report a non-significant negative (-.18) relationship between OCA and intelligence among college students, similar to Bashore's observation.

McCroskey and Andersen,[7] studying the relationship between oral OCA and academic achievement among college students, have found that high OCAs prefer mass lecture classes over small classes, while moderate and low OCAs reversed this preference. They also observed that highly apprehensive college students performed better in lecture classes than when they were enrolled in "communication intensified" small classes. Garrison, Seiler, and Boohar,[8] in three separate studies using Life Science students, found no support for the hypothesis that undergraduate students suffering from the debilitating effects of OCA would manifest detrimental effects in academic achievement, in either communication-restricted or traditional laboratory environments.

Additionally, McCroskey and Andersen[9] indicate that there are two barriers to sufficient teacher-student interaction. The first barrier is due to the large number of students in a classroom. It has often been said that large class sizes prevent effective learning. Students, in general, find that large class sizes create an impersonal atmosphere and ineffective learning. Teachers often state that because of the large numbers of students they must teach, they are not as effective in their teaching, and thus prefer working with smaller classes. Teachers also complain that when class sizes are large they do not have ample time to help students on an individual basis. It is obvious that the larger the number of students in a class, the less potential there is for effective student-teacher interaction. The second barrier is OCA, which has its effects primarily in small classes. Small class sizes generally allow for more potential student-teacher interaction. Some students, because of their apprehension, are not able to function adequately in this environment either. Their apprehension is so great, that their inability to communicate with their teachers and fellow students inhibits or effectively reduces their success.

There now appears to be a third barrier, a barrier that suggests that high OCAs tend to avoid interactions outside of class with their instructors. Scott, Yates, and Wheeless[10] indicate that the highly apprehensive students observed in their study avoided seeking additional instructional assistance from tutors, even though several different people were available to help them. In a follow-up study, Scott, Wheeless, Yates, and Randolph[11] found that test anxiety and OCA were significantly correlated ($r = .32$), thus suggesting that test anxiety may have mediating effects on academic achievement variables.

Furthermore, McCroskey and Sheahan[12] have found that high OCAs interact less with peer strangers, have fewer close relationships with faculty members, are less satisfied with advising, and are less satisfied with the college environment. The weakness with their study, however, is that students' perceptions were measured and not their actual behaviors. The above findings, coupled with the need for further research with actual student behaviors, led to the following hypotheses:

H_1: Students who are high oral communication apprehensives will exhibit significantly lower grades (on a written term paper and on written essay exams) than low apprehensives.

H_2: Students who are high oral communication apprehensives will contact their instructor outside of class fewer times (regarding general visits and specific visits regarding help on their written term paper) than low apprehensives.

Writing Communication Apprehension (WCA)

While a large amount of research has been conducted on OCA, little is currently known about WCA. The seminal research in this area was done by Daly and Miller;[13] they developed the Writing Apprehension Test (WAT), finding that individuals with high WCA reported that they were able to succeed in previous writing courses significantly less often than those without WCA. Moreover, Scott and Wheeless[14] indicate that high WCAs are less favorable toward in-class and out-of-class writing assignments. However, neither of these studies examined the direct effect of WCA on academic achievement. The following two hypotheses are stated non-directionally, due to insufficient prior research, and because academic achievement and instructor visits have not been previously tested:

H_3: Students who are high writing communication apprehensives will exhibit significantly different grades (on a written term paper and on written essay exams) than low writing apprehensives.

H_4: Students who are high writing communication apprehensives will differ in the number of times they contact their instructor outside of class (regarding specific visits on their written term paper) than low apprehensives.

Finally, since no previous research has examined the causal impact of WCA on a student's final grade in courses based solely on written performances, the following research question was advanced:

Q: What is the nature and strength of the relationship among writing communication apprehension and a student's final course grade?

METHOD

Subjects

One hundred three students at a large Midwestern University who were enrolled in a Life Science course, entitled Impact of Biological Sciences were selected as subjects. Students completed the Personal Report of Communication Apprehension (PRCA)[15] and the Writing Apprehension Test (WAT)[16] on the second day of classes. A small amount of attrition occurred due to absences, incomplete grades, student errors in completing the tests, or students dropping from the course. Thus, 96 students who completed the PRCA and the WAT were used in the final analyses.

Procedures

The Impact of Biological Sciences course was taught by the mass lecture method in which a student's final grade was determined by four written essay exams and a written term paper. All grading was done anonymously. All grades were coded and listed by social security number; students and graders were not aware that the research study was being conducted.

During the first week of classes when the course was described to students, the instructor explained the importance of the written term pro-

ject, and the fact that over the past several years students who came in to visit with him--outside of class regarding the term paper--did significantly better than those who did not. He then indicated that they were always welcome to visit with him, and that they should definitely contact him regarding their term projects.

Measurement

The PRCA in this study produced the following descriptive characteristics: mean = 69.26; standard deviation = 14.65; split-half reliability = .92. WAT produced the following descriptive characteristics: mean = 54.30; standard deviation = 12.72; split-half reliability = .93.

The essay exams were take-home exams in which the students were encouraged to use additional materials and resources. The students had two days in which to complete each exam.

Each exam consisted of two questions with a limit of one page of written response for each question. Each question had a value of 40 points, and based upon pre-determined criteria for the answers, each was evaluated and points taken off for incorrect responses. Scores on the four exams were summed (possible high score of 320) to form the essay exam portion of their course grade. Exam scores ranged from 179-309. The mean exam score, across all four exams, was 272.55. In order to avoid any possible bias each exam was graded anonymously by two graders. Both graders had previous experience with identical exams from an earlier semester, and their grading was consistent and reliable in 95 percent of the cases.

The written paper was also graded by two graders, based on a pre-determined set of criteria. Whenever the grading score differed, the score was compromised after a discussion and the student received the average of

the two scores. There was general agreement between the two graders on 97 percent of the papers, and the differences that did occur were no greater than 5 points. Paper scores ranged from 0 to 100. The mean was 77.59.

Student contact with the instructor was simply the instructor recording the number of times a student came to visit. The visits were classified into two types: (1) General visits were visits when the student came in to discuss anything other than the term paper. The number of general visits ranged from 0 to 3, with a mean of .44; (2) paper visits were those where the student came in to specifically discuss their term paper. The number of paper visits also ranged from 0 to 3, with a mean of .43.

Statistical Analyses

The first two hypotheses related to OCA were tested using Multivariate Analysis of Variance (MANOVA). Highly apprehensive Ss were classified as those who scored greater than one standard deviation above the PRCA mean; low apprehensives were those scoring less than one standard deviation below the mean. The three resulting levels of OCA (high, moderate, and low) served as the classification variable for hypotheses one and two. Composite essay exam scores and grader ratings on the written term paper served as the dependent variables representing academic achievement. General visits and paper visits served as the dependent variables for hypothesis two.

Hypotheses three and four related to WCA. Measurement procedures for the WAT paralleled those reported for the PRCA, using the standard deviation criterion to determine apprehension levels. WCA was the classification variable, and the achievement variables served as the dependent variables for the third hypothesis using MANOVA. The fourth hypothesis was tested using

one-way analysis of variance. WCA was the classification variable and visits to the instructor about the term paper was treated as the dependent variable.

A Pearson product-moment correlation was used to answer the research question and correlations were also calculated between each of the dependent variables, in order to assess the assumptions underlying MANOVA.[17] Roy's maximum root criterion was used to determine the critical values of F-ratios in all MANOVA's. Each of the statistical tests required the .05 level of significance.

RESULTS

The correlation coefficient between the essay exam and written term paper dependent variables was significant ($r = .24$, $p < .01$). General visits and term paper visits did not correlate significantly ($r = .13$, $p > .05$). The relatedness of dependent variable assumption underlying MANOVA was met for the academic achievement variables, but not for the instructor visit variables.[18]

The MANOVA of essay exam/term paper based on academic achievement, revealed a significant difference ($F = 3.41$, 2/93 df, $p < .05$) between high, moderate, and low apprehensives. The mean of the resulting canonical variable representing academic achievement was significantly lower for high apprehenvies ($\bar{X} = 1.00$, $n = 16$) than for moderate ($\bar{X} = 1.04$, $n = 64$) or low apprehensives ($\bar{X} = 1.10$, $n = 16$). Variance in academic achievement attributable to OCA equalled 7 percent. Table 1 reports the raw means for the two achievement variables, based on levels of OCA.

Insert Table 1 about here

The MANOVA of general visits/paper visits, based on academic achievement,

revealed a significant difference ($F = 4.40$, 2/93 df, $p < .05$) between high, moderate, and low OCAs. The mean of the canonical variable was significantly lower for high apprehensives ($\bar{X} = .06$, $n = 16$) than for moderate ($\bar{X} = .06$, $N = 64$) or low apprehensives ($\bar{X} = .15$, $n = 16$). OCA explained 9 percent of the variance in student visits to the instructor. Table 2 presents the raw means for the two instructor visit dependent variables, based on levels of OCA.

Insert Table 2 about here

The MANOVA of achievement scores for high, moderate, and low WCAs revealed no significant differences ($F = .74$, 2/94 df, $p > .05$). Neither of the univariate effects of WCA on academic achievement variables was significant. Hypothesis three could not be supported.

The fourth hypothesis tested the effects of WCA on visits with the instructor regarding the term paper. The analysis of variance indicated no significant differences ($F = .33$, 2/94 df, $p > .05$) between high, moderate, and low WCAs. Thus, the fourth hypothesis could not be [illegible]ed either.

As the matrix of zero order correlation coefficients indicates in Table 3, the relationship between writing apprehension and student's final course grade was significant ($r = -.25$, $p < .01$).

Insert Table 3 about here

DISCUSSION

Results from this study suggest that communication apprehension does have a deleterious effect on academic achievement and student behavior. While it was previously thought that OCA affected academic achievement,

no previous research has examined actual student behaviors in terms of visiting with instructors outside of the classroom.

OCA was predicted to affect academic achievement in hypothesis one. Our results were consistent with previous research, confirming this prediction. It was also predicted in hypothesis three that WCA would affect academic achievement. However, our results indicate that WCA was not significantly related to academic achievement variables in either univariate or multivariate analyses.

Hypothesized relationships were generated regarding a student's behavior in terms of visiting their instructor outside of class. OCA was predicted to affect outside classroom visits in hypothesis two. Again, following OCA theory, this result was confirmed. Hypothesis four was not supported; the level of WCA did not appear to affect the number of visits to the instructor regarding the term paper.

The findings of this study indicate that WCA does not affect academic achievement or student behaviors related to communication with their instructor. This result is similar to that noted by Scott and Wheeless.[19] Their findings suggest that WCA is more clearly related to attitudes and satisfaction about writing than as an actual measure of a student's apprehension or fear.

The results of our research question seem to place doubt on the above findings. WCA did affect overall achievement in terms of the final course grade. High WCAs had lower final grades. This finding may shed new light on writing apprehension, in that WCA and its effects may be more situational than trait in nature. The basis for this conclusion is the fact that hypothesis three was not confirmed, but when examining the individual correlations there was a significant negative correlation for

the exams ($r = -.25$), but not for the term paper ($r = -.16$). This suggests that the situation (environment) and the circumstances in which the writing occurs, may be the (causal) anxiety producing agent. This appears to support the findings recently reported by Scott, Wheeless, Yates, and Randolph.[20]

While the above finding could be based on the different situations and circumstances in which students write exams and term papers, the exam may create pressures because of the time limitations in which the students have to express themselves. The term paper, however, allowed more time for students to gather materials, to make corrections, and to possibly get additional help. Another explanation may be that since students had the entire semester to work on their term paper, they are able to avoid the apprehension-like feeling associated with time limiations, as in the controlled environment or restricted time limitation of an examination. Still another explanation may be that test anxiety (a highly specialized form of communication apprehension) may have been a mediating factor not accounted for in this research. However, no data is currently available on the relationship between test anxiety and WCA. Thus, more research is still needed to explain the causal effects of the various types of communication apprehension on academic achievement.

In reviewing our data another interesting explanation evolved about our findings. It was noted in our rationale that OCA did not correlate significantly with intelligence. The results of similar studies suggest that OCA does affect academic achievement. Whether this is true in all aspects of a student's behavior is not currently known. Until further research is conducted, the following implications should help teachers cope with the problems of CA in the classroom.

IMPLICATIONS FOR THE CLASSROOM TEACHER

The implication of our research on CA are of considerable importance to all classroom teachers. Previous research indicates approximately 15 to 20 percent of the college student population suffers from the debilitating effects of OCA. This finding is also true of elementary and secondary students.[21] Thus, it is imperative that we continue to make the classroom teacher aware of this problem and its effects on students' achievement and behavior. Teachers should be made aware when students avoid interactions that their avoidance may not be due to the lack of motivation, an unwillingness to communicate, or because they lack intelligence. The avoidance may be due to CA.

The first implication that can be drawn from this study is as CA becomes more pervasive, the need to inform the classroom teacher of its affects becomes greater. Teachers should be trained so that they can better recognize those students who suffer from CA. Thus, it is important that they begin to evaluate their students using the tests that are now available.

A second implication is as teachers become aware of the problem, and as they detect which students suffer from CA, they will need to learn what they can do about it. Several methods are available to help students overcome the problem of OCA. Examples include systematic desensitization, and individual therapy. The systematic desensitization program appears to be the most widely used therapy, and it can be implemented easily in any school system.[22] The concerned teacher should push for the implementation of such programs. To date there are no treatment therapies available for WCA.

The third implication is that classroom instructors need to use a variety of instructional methods, as well as alternative techniques for providing students with help outside the classroom. The first part of this implication suggests that teachers need to be aware of courses which require the use of only one method in which students can demonstrate their competencies. Limiting a student to only writing or only oral means of demonstrating what they have learned may place some students at a severe disadvantage. The second part of this implication suggests that while students may benefit from extra help from their teacher, they may not seek it. Means other than direct teacher contact outside of class may need to be made available to some students. For example, additional instructional materials could be made available to help explain assignments more thoroughly. Teachers may also need to take more initiative to counsel students who suffer from CA.

Finally, as a result of this study, teachers should consider the impact CA has on academic achievement and instructor-student interactions outside of class. While WCA cannot be directly linked to performance on written term papers, it did affect final course grades, and thus should be considered further in future research in communication education.

FOOTNOTES

[1]Communication apprehension refers to an anxiety syndrome associated with either real or anticipated communication with another person or persons. See James C. McCroskey, "Classroom Consequences of Communication Apprehension," Communication Education, 26 (1977a), 27-33. The low apprehensive person anticipates communication with others as a pleasant and rewarding experience, while the highly apprehensive person expects either no reward, or a high degree of punishment, as a result of communicating with others.

[2]J.A. Daly and M.D. Miller, "The Empirical Development of An Instrument to Measure Writing Apprehension," Research in the Teaching of English, 9 (1975a), 242-249; J.A. Daly and M.D. Miller, "Further Studies on Writing Apprehension: SAT Scores, Success Expectations, Willingness to Take Advanced Courses, and Sex Differences," Research in the Teaching of English, 9 (1975b), 250-256; J.C. McCroskey, "Classroom Consequences of Communication Apprehension," Communication Education, 26 (1977a), 27-33; J.C. McCroskey, "Oral Communication Apprehension: A Summary of Recent Theory and Research," 4 (1977b), 78-96; G.M. Phillips, "Reticence: Pathology of the Normal Speaker," Speech Monographs, 35 (1968), 39-49.

[3]J.C. McCroskey, "Classroom Consequences of Communication Apprehension," Communication Education 26 (1977a), 27-33.

[4]M.D. Scott, M.P. Yates, and L.R. Wheeless, "An Exploratory Investigation of the Effects of Communication Apprehension in Alternative Systems of

Instruction," paper presented at the International Communication Association Convention, Chicago, 1975.

[5]D.N. Bashore, "Relationships Among Speech Anxiety, IQ, and High School Achievement," unpublished Masters Thesis, Illinois State University, 1971.

[6]J.C. McCroskey, J.A. Daly, and G.A. Sorensen, "Personality Correlates of Communication Apprehension: A Research Note," Human Communication Research, 2 (1976), 376-380.

[7]J.C. McCroskey and J.F. Andersen, "The Relationship Between Communication Apprehension and Academic Achievement Among College Students," Human Communication Research, 3 (1976), 73-81.

[8]John P. Garrison, William J. Seiler, and Richard K. Boohar, "The Effects of Talking Apprehension on Student Academic Achievement: Three Empirical Investigations in Communication-Restricted and Traditional Laboratory Classes in the Life Sciences," in B. Ruben, ed., Communication Yearbook I. (New Brunswick, NJ: Transaction-International Communication Association, 1977), 513-524.

[9]McCroskey and Andersen.

[10]Scott, Yates and Wheeless.

[11]M.D. Scott, L.R. Wheeless, M.P. Yates, and F.L. Randolph, "The Effects of Communication and Test Anxiety on Three Indicants of Achievement in the Alternative System of Instruction: A Follow-up Study," in B. Ruben, ed., Communication Yearbook I. (New Brunswick, NJ: Transaction-International Communication Association, 1977), 543-554.

[12]J.C. McCroskey and M.E. Sheahan, "Communication Apprehension, Social Preference and Social Behavior in College Environment," paper presented to the International Communication Association, Berlin, Germany, May, 1977.

[13]Daly and Miller (1975a and 1975b).

[14]M.D. Scott and L.R. Wheeless, "Communication Apprehension, Student Attitudes, and Levels of Satisfaction," Western Journal of Speech Communication, 41 (1977), 188-198.

[15]The Personal Report of Communication Apprehension (PRCA) is a 25 item Likert-type scale measuring oral communication apprehension. The PRCA is a reliable and valid multi-generational research instrument.

[16]The Writing Apprehension Test (WAT) is a 20 item Likert-type scale measuring written communication apprehension. Its reliability has been consistently found to be .93 or higher. To date its validity has not been well established.

[17]S.J. Press, Applied Multivariate Analysis (New York: Holt, 1972).

[18]J.A. Daly, J.C. McCroskey, and V.P. Richmond, "Relationships Between Vocal Activity and Perception of Communicators in Small Group Interaction," Western Journal of Speech Communication, 41 (1977), 175-187, suggest that MANOVA has been found to have lower power than univariate analysis of variance, when a series of dependent variables are uncorrelated or have low correlations. While the instructor visit dependent variables were not significantly correlated, the resulting MANOVA did have enough power to detect the significant differences that existed.

[19]Scott and Wheeless.

[20]Scott, Wheeless, Yates, and Randolph.

[21]K.R. Garrison and J.P. Garrison, "Measurement of Communication Apprehension Among Children," paper presented to the Internatonal Communication Association, Berlin, Germany, May 1977.

[22]J.C. McCroskey, "The Implementation of a Large Scale Program of

Systematic Desensitization for Communication Apprehension," Speech Teacher, 21 (1972), 255-264.

TABLE 1

RAW MEANS OF ACADEMIC ACHIEVEMENT VARIABLES

DEPENDENT VARIABLES	PRCA LOW	MODERATE	HIGH
ESSAY EXAMS	286.31	271.89	262.25
TERM PAPER	78.75	77.36	76.25

TABLE 2

RAW MEANS OF INSTRUCTOR VISIT VARIABLES

DEPENDENT VARIABLES	PRCA LOW	MODERATE	HIGH
GENERAL VISITS	.56	.42	.38
PAPER VISITS	.87	.34	.38

TABLE 3

ZERO ORDER CORRELATION COEFFICIENTS*

	OCA	WCA	EXAM	PAPER	GRADE
OCA	1.000				
WCA	.578	1.000			
EXAM	-.240	-.244	1.000		
PAPER	-.084	-.156	.247	1.000	
GRADE	-.222	-.245	.821	.630	1.000
$\bar{X}$	69.614	54.281	272.687	77.406	82.885
σ	14.520	12.72	27.118	15.084	8.432

* N = 96